

the Atari JOURNAL

THE PUBLICATION FOR
THE ATARI MICROCOMPUTER USER

Volume II, Number 10

December, 1987



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This Month's Cover: This month's cover carries our wishes to you for a Happy Holiday Season, and the original was done by our volunteer resident Art Director, Irv Ostrow. Irv's also been responsible for the two previous issue covers, for which we have received quite a few nice compliments. Thanks, Irv! (And Happy Holidays, yerself!)

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Jack P. Durre', Editor/Publisher
The Atari JOURNAL
13904 S.W. 75th Street
Miami, FL 33183
Telephone (305) 382-1900

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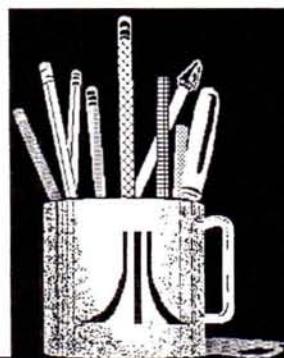
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From the Editor's Desk



COMDEX, SCHMOMDECKS...

Whew!!! It has been quite a busy month around here, and what with COMDEX and a local Atarifest, I've missed my deadline for the first time in over two years! With all of the news, I'm hoping that you'll be understanding, and by way of compensation, we've again put together a record number of pages for *The JOURNAL*!

You've probably also noticed that as mentioned last month, we've returned to bond paper for the interior pages, until such time as economics again allow for use of coated stock. This publication has always been something of an experiment, and I hope that you can empathize with us on these things.

Last month, I indicated that I expected Atari to show some "vaporware" at COMDEX, and they certainly didn't fail me on that count. I've tried to reserve as much reaction to Atari's showing at COMDEX as I might, since too much negativism does little good. I'd like to take a simple poke or two at them for this showing, and let it pass, but unfortunately, I don't see that happening. I'm in hopes that all is not going to turn out to be as grim as my first reaction would lead me to believe, but I've spoken to a number of developers since the show, and most seem to have similar reactions to my own, but again, perhaps we've all missed some magical fact. I believe that what was actually shown by Atari was "mythical", to say the least, and had virtually no value nor impact for the present user-base. To say that we might someday have use for an intellectual's machine such as the Transputer-based "Abaq" wouldn't be 100% wrong, but we're likely to be old and grey by that time! PC-clones? They're already a dime-a-dozen! WHY, Atari? Multiuser networking? On a network system that doesn't yet work? And IDRIS? Most UNIX developers seem to consider this one "half-a-loaf"! Hmm...lots of "Abaq" (Hebrew for "dust", according to Sam T.!), I'm afraid. The laser printer? It starts at \$100 more than a better machine, built on the same engine, and is as much as \$700 MORE than an HP LJ II? C'mon... The CD-ROM? Wellll...I'm hoping.

Y'know, I *WANT* to believe that Atari can bring these things off, I really do. Unfortunately, my brain is still working, as well as my memory cells! I just can't see how a company with the record that Atari presently holds, can even *hope* to accomplish all of these other things, while virtually ignoring the pleas from their present users for more powerful 68020 and 68030-based machines, higher resolution monitors, de-bugging of TOS, etc. I spoke to quite a few Atari employees about these topics, and even there, their understanding of how they are expected to accomplish these things is a puzzlement to them.

Aside from some brief mention of Atari in the PC-oriented press, little, if anything, is likely to result from this, *if we're lucky*. The alternative could be yet one more loss of confidence by those of us who try to sell these machines to our acquaintances, in spite of Atari's lack of support.

Sorry.
Seeya! [Jack]

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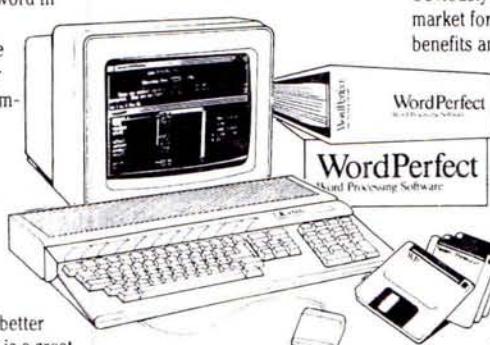
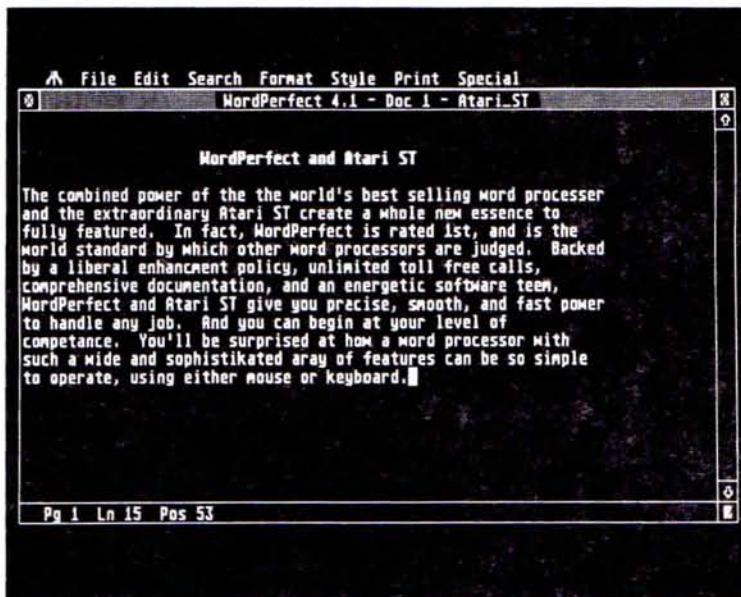
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COMDEX / FALL '87

Las Vegas: November 2-6 --

That's where it was for another year, and it was bigger than previous years. Estimates ran from 82,000 to over 100,000 attendees, depending upon whom you asked. On the other hand, the average annual rainfall for Las Vegas also varied by an equal amount, and this was based upon which cabbie, desk clerk, or croupier you asked. Rain? Yes. Funny thing too, for this Floridian, who is accustomed to prodigious amounts of the stuff as a sometimes-daily happening. Seems that to the desert, as little as half an inch can create flooding conditions...just ask some of the show folks who attempted to cross the street from the Main Convention Hall to the West Hall! Near 'most drown, they did!

The rain aside, it was quite a show, and a good time was probably had by all. Every year, I attempt to describe the size of this show for those of you who've never attended, and each year, I fail. Since the rain tends to bring out the "farmer" in me, let me try it this way: My estimate of floor area in the two main convention halls would run to 20 acres, without considering the multitude of hotels scattered about. Imagine walking those 20 acres, planting seeds in rows 2-3 feet apart (The Interface Group states it as "15 miles of aisles"), if you will, and you begin to get the idea...it's BIG!

It's still a bit difficult to assess a specific "theme" for the products being shown, but personally, and beyond the Atari booth, it was more desktop publishing-oriented than in the past. A new term was also beginning to be bandied about, in the form of "desktop video", as you'll see later. It sometimes seemed that every exhibitor had their own laser printer and/or image scanner/video digitizer, hi-rez monitor, high definition projection unit, and other "accessories". Atari had theirs, as well, but we'll get to that in a sec.

The Press Conference...

Several new machines were among the topics of discussion at the Monday afternoon press conference called by Atari. Sam Tramiel spoke first, outlining Atari's present financial position, as well as the latest quarterly stock report. Briefly, Atari's profits for the quarter ending 10/4/87 were \$8.3 million, as compared to \$4.6 million during the same quarter last year. In addition to this, he also mentioned that Atari was in a strong cash position, having \$80 million available, after the purchase of Federated, which took place during October.

Sam Tramiel briefly announced several new machines, and then asked Shiraz Shivji, Vice President of Atari, who is their designer, to expound further. Shiraz began by reiterating Atari's position, and

continued support of the 680x0 series of computers, while discussing the latest series of 80xxx machines to bear the Atari name.

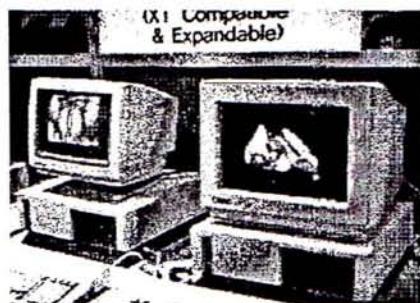


The Atari PC-1 8088-based clone

The new versions of the IBM clones are known as the PC-2 through -5. The PC, which was originally announced so long ago, is reported to finally be shipping in Europe, and has just received FCC approval in the U.S. The PC-2 is also to be an 8088-based machine, much like the PC, but will include 5 slots for various cards, as well as a 135-watt power supply, and EGA graphics support. Both of these machines are intended to sell for "less than \$1000". Next in line were two AT-compatible machines, the PC-3 and PC-4. These 80286-based units will utilize VGA graphics capability, and are reported to be the first in the market to adopt this standard in a production machine. (Little more information was provided for

(continued...)

COMDEX (continued...)



The PC-3 (left) and PC-4 AT clones

the PC-3, but it will probably emerge as a stripped-down version of the PC-4.) These are to be 8/12 MHz, zero-wait-state machines, and will include 512K of RAM as standard, with expansion up to 1 megabyte. They will also contain one parallel and 2 serial ports, and a built-in hard drive controller, with cacheing, capable of 1:1 interleaf, providing for a much quicker read/write speed than with other clones. Next in line was an 80386-based unit, to be known as the "PC-5". This machine will operate at 20 MHz, and utilize a 64K cache, accessible at 35 nanoseconds, producing a Norton Utilities Speed Index (SI) of 23! For those involved with the IBM-compatibles side of the market, these were interesting revelations.



The PC-5, an 80386-based clone is projected for delivery sometime in 1988.

Shiraz Shivji also briefly mentioned an upcoming ST machine, intended to provide more colors and higher resolution, which he "hopes to be shipping sometime next year". It was not clear, from his remarks, as to whether this was the same machine that Sam Tramiel made reference to as a 68030-based machine, and intended to "use the ST as a front end", or if the two were separate units. Either of these machines could be construed as the long-rumored "EST" or "TT", although the EST is presently a 68000-based unit.



The INMOS T-800-based Transputer unit interfaces with the Mega 4ST, seen below the shelf.

Next in the discussion was the Local-Area-Network (LAN) being touted by a company known as "Moses Computer". They were handing out press information, and color 'cut sheets', but none of the system was seen to actually work. Moses has chosen to name this unit "Promise", producing their catch phrase, "Moses: The Promise LAN"! (Really!) The jokes already beginning to show up are likely to grow old long before this one actually arrives. Best one this week had to do with Moses taking his people into the only spot in the MidEast with no oil!

The next topic mentioned by

Shiraz was the INMOS-designed "Transputer" machine, to be known as the "Abaq". Sam Tramiel



The Transputer-based "ABAQ" was shown running page-flipping graphics demonstrations.

had explained the Abaq name as being Hebrew for "sand" (as in the silicon from which I.C. chips are made), or... "dust" (no further comment required!). For those to whom this is a new subject, INMOS is a British company who have designed a parallel processing device, allowing for quantum leaps in computing speed, given the relative simplicity and low cost of the devices. Speeds for this device are referenced in terms of "MIPS" (millions of instructions per second), or "MFlops" (Millions of floating point instructions per second). Suffice to say that the speed capabilities are impressive. This is also a RISC (Reduced Instruction Set Computer) processor, to add yet one more acronym to the puzzle. The basic Abaq, with one T-800 chip is capable of 10-15 MIPS, and 1.5 MFlops, and as processors are added in parallel, up to 12 additional, the speed approaches 120 MIPS. The unit will use an operating system produced by Perihelion (the originators of AmigaDOS for Commodore-Amiga), known as "Helios". This operating system is still in (continued...)

COMDEX (continued...)

development, although Atari was promising first developer units in the first quarter of '88. One wag was heard to comment that the project might be considered as other than vaporware, ONLY after at least 100 units were installed outside of University applications. To say that this is an intellectual's machine would be an understatement, but to hold out hope for anything more than that would raise a question about one's judgement! It's an impressive concept, but will most likely require prodigious amounts of both time and money...not Atari's strong points, certainly.

At this point, Sam asked his brother, Leonard Tramiel, to make a few comments. Leonard briefly discussed the preceding remarks, and then spoke of the CD-ROM. Briefly, he reminded his audience of Atari's early introduction of the concept of a Compact Disk-based machine, as well as their refusal to bring the product to market until such time as the machinery producers lowered their prices to an acceptable level. Apparently Atari now feels that the price is right, as they are intending to begin shipment of the first units in February of '88, and will include an interactive dictionary, as well as being hopeful of shipping several other CD-ROM data programs.

The price is expected to be \$595. Leonard Tramiel then discussed a professional-quality typesetting program, "Deskset", from G.O. Graphics, which was being shown in the Atari booth. This was touted as an alternative to other forms of typesetting, and is intended to communicate with CompuGraphic and similar professional typesetting machines. (Obviously with the earlier machines, since CG has just recently reached agreement with Adobe to add PostScript to their line through "CG Script", a hardware/software interface.) It allows an almost true-WYSIWYG display on the screen, as compared to the output from the Atari SLM804 laser printer, and presently has 95 fonts available ("fonts" as more closely defined by typographers, i.e. "Times Roman" is one font, while "Times Italic" is yet a second.) While no price has yet been set for this program, it is presently available in the PC environment, and sells for approximately \$2000.

Now, let's talk about the overall show a bit more...

If you've never before attended a major sales convention, you may be more than a bit awed by all of the press conferences, panel discussions, and "gimmicks" that accompany one. Each exhibitor must compete

with the competition, as well as the surroundings, to draw the prospective buyer into their space. Once there, it's hoped that potential sales will be closed, new contacts established, and old ones renewed. During the first days of the show, this is generally the case, while the last day or two sees weary feet and aching backs taking a primary role, as sales forces hang back, waiting for the customer to come to them. Some exhibitors merely present their products in the best light that they can afford, and hope that the shrewd customer will find his way to them. Others blare out their claims in audaciously-designed display booths, comedic stage shows, or clever buttons and fuzzy animals to be worn by the customer. My own choices for best eye-catcher of the year would be mixed between the full-sized ice hockey stick (in carrying case!), presented to members of the press by Ogivar, Canadian manufacturers of a laptop computer, and WordPerfect Corp., for their "Top One" (a play on "Top Gun") billed caps, which required this reporter to visit the WP booth no less than 10 times before gaining one! (and I still never got to sit down!)

Many of the booths display products that are of little interest to the Atari fan, while others include products that have been

(continued...)

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COMDEX (continued...)

often heard of, but never-before-seen, requiring a visit. Scattered throughout these booths will be an occasional Atari ST or Mega computer, or perhaps an Atari-oriented vendor, such as Michtron, or Supra. After stopping at many of these, one eventually wends through the surroundings to arrive at the Atari booth.

The Atari Booth...

This year, Atari occupied a moderately-large floor area, in a relatively prominent location, and again utilized the concept of smaller, individual displays within the overall booth. These were doled out to developers on a last-minute, keep-'em-guessing basis, which certainly tends to inspire loyalty, I suppose(?). I heard mention of 42 different booths, but didn't bother to actually count them myself. Some booths were occupied by the same exhibitor each day, while others were on a shared, or rotational basis. The central area was devoted to "New Products From Atari", and contained several new machines.

On one side of this New Products display were new IBM compatibles, the PC-2, PC-3, PC-4, and yes, the PC-5. These ranged from an 8088-based machine with 4 slots (the -2), which will fill the gap just above the previously-announced "PC", through the -3 and -4 machines, which are 80286-based, up to the -5, which is 80386-based. All were in a newly-styled case, with the identifying model number in raised letters on the front panel of the disk drive area. Although Atari assures me that these cases are to remain for the production models, other observers indicate having seen this same case style used for a number of earlier prototypes. We'll see.

On the opposite side of the partition for this particular area sat the Transputer-based "Abaq"

machines. Given their as-yet-unfinished software and operating system, they were performing relatively simple graphics demonstrations in striking resolutions. Given the T-800 chip's abilities to manipulate high-resolution images in many colors, they were using NEC Multisync monitors, and bore a striking similarity to a Sun or Appollo workstation, or to the Mac II's "Super Mac" abilities. With so much of this machine still waiting to be finalized, price was yet another of the "I-don't-know's" surrounding it, but a semi-educated guess would have them beginning the price/options climb at about \$5000, at present. Not entirely in Atari's usual price range, eh?

Atari also had their PC-1s (the one said to now be shipping in Europe) ranked alongside one of the main show floor aisles, and these seemed to generate at least mild interest from passersby. They were utilizing an amber-screened Atari monitor, the PCM124, capable of up to 16 shades, with a resolution of 720 x 348. Atari maintains that these machines "will be sold through mass merchants and computer specialty stores".

The Desktop Publishers...

Proceeding around and about the booth, one came across different "islands" of exhibitors, each of which was grouped by area, or theme. The desktop publishing vendors were all grouped around one corner booth, or island, and included "Publishing Partner" from Soft Logik, Corp., who were showing their upcoming version 2.0, to be known as "Publishing Partner Professional", or simply "P3". Also shown at this same booth was Migraph's "Easy-Draw", complete with its latest addition, "Supercharger", allowing one to import DEGAS and NEO and other picture files into an Easy-Draw page. Around the corner was "Deskset" from G.O. Graphics, the professional-level

typesetting program mentioned earlier. The output from this one was quite respectable when delivered by the Atari SLM804 300 dpi lasers at every station on the island. Next was Timework's "Publisher ST", a GDOS-based DTP program looking quite near completion. It appears capable of producing many of the typical newsletter-type of applications, and is expected to sell for \$99.95. Finally, around the corner, and next to Soft Logik, was a German product, "Calamus", being distributed through ISD Marketing, Inc. Although complex, this program appears to have a great deal of "horsepower" behind it, and may be a real challenger, once completed. Although not located in this particular area, "Fleet Street Publisher" was being shown by Spectrum Holobyte, and it was understood that the long-awaited printer drivers are finally available! (No confirmation on this, as yet, however!) Also located in a separate area was "GFA Publisher", being distributed in the U.S. through MichTron. Given all of the above, it would seem that the Atari ST is becoming recognized as a VERY powerful DTP machine!

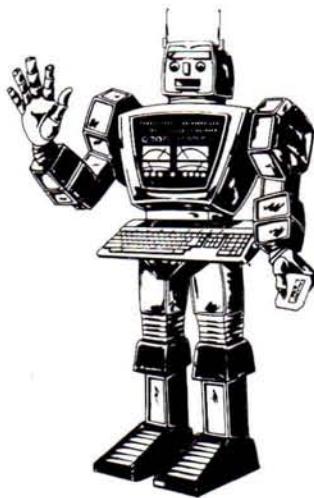
Multitasking/Multiuser...

At a nearby island, several different vendors were showing their multiuser, multitasking software for the Ataris. These were based on the Whitesmith's Ltd. rendition of a UNIX-compatible OS, known as "IDRIS", and included several different document processors, including "LEX P*D*Q", from Trajectory. This program combined word processing and database as well as the "LEXET" desktop publishing system. At this same island, Network Research Corp. was also showing their "FUSION" networking software, which operates under IDRIS. FICOR, Inc., was demonstrating their "AutoGraph" program, a

(continued...)

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COMDEX (continued...)

full-featured business graphics system. Syntactics Corp. also introduced the "Crystal" Document management system, intended to aid the user in document preparation, layout, and integrated typesetting. Yet another developer, Tigera Corp. was demonstrating their "WORD ERA" document processing system for the Atari Megas. This particular program was a "Wang-compatible" word processor system, and in the MS-DOS market, lists for \$595. Prices were unavailable for any of the IDRIS-based products for the Ataris.

Another developer, Jefferson Software, was also located in this same area, and were showing their Modula-2 programming software in both TOS and IDRIS-based versions. This company's approach has been rather low-key, and support seems to be quite strong for this latest rendition (version 3) of Dr. Niklaus Wirth, the creator of Pascal.

Standing by itself, near the other Atari "New Products" was the CD-ROM unit. This unit was essentially the same, performance-wise, as was the previous version, shown two years ago. This time, the unit was demonstrated with an interactive dictionary, "VISUAL DICTIONARY", from Software Mart, Inc. One example had the user selecting a picture of a bicycle, and then pointing to the spokes of a wheel. Upon query, the system would announce the name and define these objects. Atari indicated hope that yet more applications will be available for the system by the time of its release, in February, '88.

CAD/CADD...

Occupying two other islands were developers showing the latest versions of CAD, and CAD-related developments. QMI was showing its "PROTABLET ST", which allows the user to select between the mouse, or a professional

graphics tablet. Around the corner was the latest release from MichTron, "MASTER CADD". This two-dimensional to three-dimensional CADD program is quite remarkable in its speed, allowing the user to jump back and forth from one form to the other at calculation times that were almost instantaneous. Another developer, Technobox, from Germany, was showing "CAMPUS", which seemed to be oriented strongly towards the electrical and mechanical engineer, and was quite logical in its interface. The architectural applications are also in progress, and this may become a strong contender, if the proper U.S. distributor can be found. Another newcomer, this time from the PC world, was IntelliDesign, Inc., with "ID VIEW", providing both 2-D and 3-D views. This program is "still in transit", with "IGES Support Available 2/1/88", "DXF Support Available 4/1/88", and "LISP Support Available 4/1/88". On the front side of this island was Foresight Resources' "DRAFIX I", originally shown last year, and now available for 520STs, 1040STs, and Megas. This one is a capable AutoCAD competitor, and quite professional in its abilities. Finally, and just around the corner of one of the islands was Migraph's latest, "M-CADD". The 2-D section of the program is set for release in December, and will list for \$499, while the 3-D section is expected to ship in the first quarter of '88. This one has been undergoing some rather serious applications testing in real-life applications, and holds great promise for the Atari CAD market.

Speaking of the Atari CAD market, perhaps this is the appropriate location to mention a product that was shown elsewhere in the show. The country of Holland supported its software developers through the use of a rather large floor space and booth in the West Hall, and one developer, with the rather unlikely

name (for Atari fans, at least!) of Arcade O. Harris, b.v. This developer was showing a CAD program on both the IBM and the Atari Megas, known as "ARKEY". This is a full-blown professional 2-D, 3-D CAD program, and presently claims over 400 installations in Holland alone! The developer was seeking U.S. distributors and support, but wasn't clear as to whether one had yet been found. This program utilizes a great deal of customer support, and as such, carries a hefty price tag, at \$3500! This program did provide one unique feature not yet seen on others, in its ability to produce sections from drawings, allowing the user to render them.

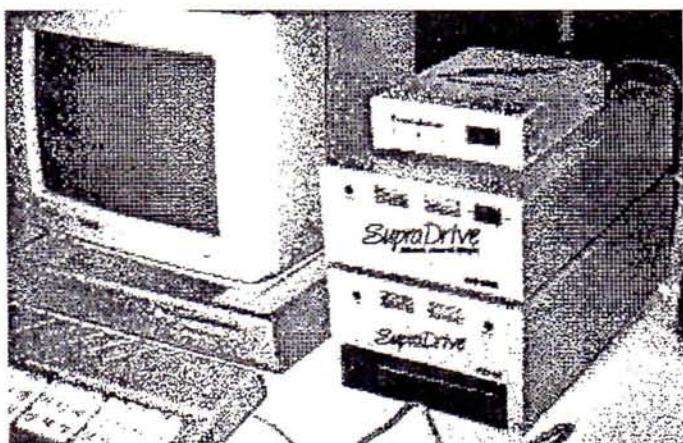
Back at the Atari booth, one finally found Hybrid Arts, demonstrating their latest, the ADAP SoundRack, a professional A/D convertor, for digitizing your MIDI music, with sampling at 44.1 KHz, and 16-bit resolution. Normally quite easy to find in an Atari booth, it seems that this time Hybrid was banished to the "Land of Headphones", in an effort (by whom?) to reduce complaints from other exhibitors.

Another interesting exhibit was from Data Pacific, who were demonstrating their "Translator ONE" interface unit. When used in line with an Atari ST computer and its disk drives (either external or built-in), a "Magic Sac" (another Data Pacific product) user can read and write to Macintosh-formatted disks! This allows one to purchase copy-protected software for the Macintosh, and run it on his Atari! Quite an accomplishment! To make the impression even more interesting, the Translator was sitting atop a 30-megabyte Supra hard drive, which was, in turn, sitting atop Supra's latest, the 10-megabyte floppy disk drive. This latter unit utilizes the Konica 5 1/4" disk drive, which is capable of reading both IBM-formatted disks as well as the Konica certified disks, allowing for data storage of

(continued...)

COMDEX (continued...)

up to 10 megs per disk. Discussion with Supra personnel indicate the probability of a 30-meg hard drive being included in the same cabinet, for a very impressive unit! No pricing, but speculation would put this one in the \$1600-\$1700 range. (Incidentally, Supra was also showing their new 2400-bps modem, which is now shipping, and a review will soon appear in *The Atari JOURNAL*!)



The Data Pacific "Translator ONE" disk drive interface, seen topping a Supra 30-meg hard drive, atop the new 10-meg floppy disk drive.

DESKTOP VIDEO...

Close by stood one of the more attention-gathering displays in the entire booth, the Antic exhibit. Here, Gary Yost and Jack Powell, of The Catalog Software, presented some of the most remarkable results of determination yet seen. The up-and-coming catchphrase for the next few years is likely to be "Desktop Video", and here were its beginnings in the Atari camp. When originally presented, several years ago, many naysayers were heard to belittle the STs graphics capabilities, especially with regard to its maximum number of colors, and its lack of ability to interface with video devices. Well, NO MORE! In this small area, Gary and Jack were showing CAD-3D, with all of its outgrowths, in the "Cyber Studio", including "Cybermate", the animation and editing language, "Cyber Paint", a

cel- or frame-paint program, and "Cyber Control", the motion control language. In addition to these, the latest is "Spectrum 512", a paint program allowing for the manipulation of up to 512 colors on an STs screen simultaneously! Sandwiched into the middle of all of this was a large Sony color monitor, running an 8-mm videotape produced on an Atari, with titling and other effects superimposed over various scenes gathered from commercial TV!

A prototype genlock device was used, as well as an upcoming RGB>Composite video interface from Practical Solutions. No release date was indicated for these two interesting

pieces of hardware, but announcements should soon be forthcoming. This is true professional-level video software, and many people from video and movie studios are beginning to take notice of the Atari, based solely on these programs.

Many more interesting items constantly seem to appear and disappear in this area of the show floor, and one of these was a pair of Frenchmen, who were there seeking distribution for two items which they produce in France. The first was an art program, with a working name of "ZZ-Rough", with some rather unique abilities. It ran in low-resolution color, and was intended for use by art directors, ad agencies, and the like. It utilized very logical icons for its interface, and allowed for a real-life drawing development, including the ability to sketch in

one medium, and finalize in another, followed by erasing the construction lines, etc. As an interesting aside, these gentlemen had prepared a slideshow to run on a 1040, outlining how this very program had been used in the design of their other product, an Atari carrying case! Quite sophisticated in appearance, this case is intended to allow one to transport a 520ST or 1040ST (or, in a later version, a Mega), complete with all associated parts (monitor, mouse, powersupply, etc.) in a back-packable form. The prototype was done in a dark charcoal grey luggage-type nylon, with foam padding, black and blue striping, and the Atari name silkscreened across the main flap of the package. Impressively designed, and a boon to the user who would like to move his computer from time to time! Negotiations were not yet resolved by show's end, but look for this one soon!

Is that all?

Nope. This was only a small portion of the overall COMDEX show, and each day brought new revelations as to higher-resolution monitors, new software for "Desktop Presentations", color PostScript printers, High-Definition video, and many more areas. This is quickly becoming a more graphics-oriented industry, and while the spreadsheets and databases are still out there, they are quickly being left in a corner, unless they add graphics and more ease of use to their screens. The old adage of a picture having the value of a thousand words is beginning to be noticed in the computer marketplace, and will most likely continue to grow with each year. The pioneers, such as the Atari, are helping it to happen, and it has become a case of keeping up, things are happening so quickly!



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P ersonal ascal rogramming

by Bob Balay

Being a BASIC programmer from my 8-bit days, the biggest disappointment about my ST was the BASIC language that came with the machine. Before I had the opportunity to sit down and start writing programs, I perused the ST BASIC sourcebook and was really excited about the plethora of commands that were available. Unfortunately, the GEM windows, which make the ST such a versatile system, are one of the downfalls of ST BASIC. Floating point accuracy is another gripe. The language is okay for writing small utilities, but it leaves a lot to be desired. Before there was another commercial BASIC on the market, I got talked into buying *Personal Pascal* (c)1986 Optimized Systems Software (OSS).

Probably the best selling point of any OSS product is their outstanding reputation with the 8-bit Ataris. They wrote the BASIC and DOS for the Atari 800

and later models. They came through with BASIC A+ and BASIC XE, which were even better versions of the original Atari BASIC. The hybrid language, Action! is an OSS product and one that has really made a wave in the 6502 world. Their macro assembler, MAC 65, is considered the standard for Atari software developers.

At the time I bought Personal Pascal, it was being touted as the de facto programming standard for the ST. I was really hesitant about the purchase, because I wasn't too hip on the idea of having to learn Pascal. I read things like, "Pascal is too structured," and, "Pascal's structure forces you to write self-documenting programs." Structure this, and structure that. Being a self-taught programmer, I don't particularly care for structure or self-documenting programs. I am more concerned with the final result: Does it work...and work

well? If it works, who cares what the source code looks like? If I want to change something within the program at a later date, chances are that I'm going to have to work just as hard to understand what it was that I was doing, regardless of whether it is well-structured, or not.

I took the plunge, despite everything I'd heard about 'forced structure', and I haven't looked back since! If you're unfamiliar with Pascal, you owe it to yourself to check it out. Sure, its structure can be tedious at times, but for the most part, it is a powerful, self-extensible language, which offers access to all of the best that the ST has to offer, without the \$200 price tag of a 'C' compiler. Self-documentation is just the icing on the cake! 'C' is much more difficult to learn, because it is more of a mid-level language, as opposed to a high-level language like BASIC, or a low-level language

(continued...)

PASCAL (continued...)

like Assembler. Whoa! Back up! What did I mean by self-extensible? (If you know what it means, press ahead to the next paragraph!) Self-extensible means that you can add your own commands to the language. You do this by writing what is called a 'Procedure' or a 'Function' and then you run these modules by using the name of the procedure or function as a command.

If you got to play with ST Logo when you bought your computer, you may have been a bit puzzled (unless you'd seen Logo before) about how program flow was accomplished. After a while, you figured out how to define little modules, and then call them as commands. You could even define a module that called all the other little modules, and then call the whole thing by one name. This is structured programming. The disappointing thing about Logo is that it is not capable of input/output to the disk, other than to load or save programs and pictures.

Not very practical for any file-intensive programming, like mailing lists, etc. It is useful as an introduction to structured programming, however (and making neat pictures!). I thought it would be a revolutionary idea to combine Logo and BASIC and call the result LOGIC. Apparently, this has already been done in the guise of *GFA BASIC*.

All of the GFA programs I have seen are beautiful. It is astounding to think that they are written in BASIC. However, since we're not talking about GFA BASIC, let's get back to the subject at hand. (I never bought GFA because I own Personal Pascal.) First of all, if you're a dedicated BASIC programmer, you want to write full-blown applications for the ST, and you want to expand your programming horizons by learning a new language, then you want to buy Personal Pascal, if you don't already have it. Secondly, you will need a good reference book. Oh,

Pascal! is the book recommended by OSS. For BASIC programmers, there is a very good book called, *PASCAL for BASIC Programmers* by Charles Seiter and Robert Weiss. It will teach you everything you need to know and won't waste your time with, "What is a variable?" type instructions that you don't need as an experienced BASIC programmer.

Personal Pascal provides all of the facilities that you need to develop full, point & click GEM applications that run from the desktop. It is broken up into 4 specialized functions: the Shell, which binds the Editor, Compiler, and Linker into a central application, and the Editor, Compiler, and Linker! To write a program, you must start with the Editor.

The Editor is nothing more than a text-editing program. If you don't like to use it for writing programs, you can always use 1ST Word, E-macs, or whatever.

As long as your source code is in ASCII, with no word-processor garbage in it, Personal Pascal can compile it. The advantage in using the editor provided is that it is designed for writing Pascal source code and has the capability to call the compiler immediately after you're done working on the code. Here's how it works: First, you point and click on the PASCAL.PRG icon, just like you would any other program.

Once in the shell, you select the Edit function from the File menu. The editor overlay loads and your program is read into memory. If no program exists, it creates a new file. You then begin to write your code. After you're done, you tap the F9 function key and it saves your code to disk, and loads the compiler overlay, which then compiles your source code into an intermediate link file.

If there are any errors in your source, they are pointed out at compile time. You then have the option of ignoring, editing, or quitting from the compile. If there are no errors, the intermediate code is saved in a link file with an 'O' extender. For example, the source file TELECOMM.PAS is compiled into the intermediate code file TELECOMM.O. Then, the linker overlay is loaded into memory and it merges your link file with the library files included in Personal Pascal. The result is an executable

(continued...)

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PASCAL (continued...)

program, e.g. TELECOMM.PRG. Whew! As you may have guessed, this is a time-consuming process. Using floppy drives, a good sized program can take from 5 to 20 minutes to compile and link. Using a hard drive, the same program will take from 1 to 4 minutes. You must then run the program, check for bugs, and start the process all over. You don't get the immediate syntax check and feedback of interpreted BASIC, but then you don't get the same speed with BASIC as you do with a compiled language, like Pascal.

Additionally, calls to GEM have been greatly simplified by Personal Pascal. Instead of remembering the 'C' names and parameters, like `vw_clswrk`, you merely write "Exit_Gem;" and Personal Pascal handles the rest. This is not to say that the GEM calls are not available, because provisions have been made to allow access to everything, should it be required. For example, the 'Draw_Arc' and 'Draw_Ellipse' functions in P.P. do not seem to want to work properly in medium resolution for some reason (maybe it's me!). I can't get a good circle out of them. So, I found myself having to use the `v_circle` function of the VDI. A simple procedure was given in the appendix of the P.P. manual. I set up the appropriate arrays, declared a `vdi_call`, plugged in the desired values, and it worked as advertised.

For the beginner, Pascal isn't all that different from BASIC. It doesn't have line numbers, but you can use them, if you really want to. It's just called a `LABEL`, instead. However, you will rarely, if ever, need to use labels. Math functions are annotated just like BASIC, except that you have a little bit more macro-control over your numbers. This means that you have to declare every single one of your variables and their types before you can use them. It's like using a `DIM` statement for every variable. This can be a pain, but it pays dividends when the compiler

does its thing. If you misspell a variable name in BASIC, chances are you will have something going wrong in your program because the variable always contains 0, or didn't get the right value. This could be tough to track down, since the variable will appear to be correct when you scan it. In Pascal, if you misspell a variable name, the compiler will tell you, 'Hey dirtbag! You didn't declare this variable!' (not exactly in those terms). Consequently, those dumb mistakes never make the final cut.

"I took the plunge, despite everything I'd heard about 'forced structure', and I haven't looked back since!"

You get more control in the math department because you have more operators than the average BASIC. In P.P. you have `*,/,+,-`, (the big 4) plus `DIV` (division for integers with no fractional part), `MOD` (the remainder of integer division), `&` (logical AND for bit-wise manipulation), `l` (logical OR for bit-wise manipulation), and a couple of others. It doesn't make the language more powerful, per se, but rather it merely gives you, the programmer, more control.

Familiar BASIC structures are to be found everywhere in Pascal. The For/Next loop (one of my favorites) becomes the `FOR/TO/DO` loop in Pascal. Although the 'step' feature is not included, it's easier to figure out where the loop begins and ends. Other looping controls are: `LOOP` (endless loop, which can be exited if a particular condition is met at the right time), `WHILE/DO`

(similar to BASIC's `While/Wend`), and `REPEAT/UNTIL` (loop until a certain condition is met). Arrays and strings are an integral part of Pascal variabledom, just like BASIC. Many other types of variables can be defined, using the base types, which make Pascal a custom language.

For example, if you want to use a variable that consists of three strings, you can declare the following under the `TYPE` heading:

`St3 = Array[1..3] of String` ; Then you would declare your variables, we'll call them `Set1` and `Set2`, under the `VAR` heading as follows: `Set1, Set2 : St3` ; This creates two variables, which are arrays of 3 strings each. The third string of `Set2` would be accessed like this: `destination := Set2[3]` ; The possibilities are nearly unlimited.

As you may have noticed, the operator that sets one variable equal to another is `:=`. This distinguishes an operation from a comparison. A comparison returns a true or false condition, like in BASIC, "IF `X=4` THEN ..." If `X` does equal 4 then the condition is true and the statement following `THEN` is executed. In Pascal, the same logic holds and the statement would be written in exactly the same way for a comparison. The difference for operations is not too hard to get used to. Instead of writing "`X=4`" you would write "`X := 4`" to set the variable '`X`' equal to the value 4.

Thus, with a few minor changes, Pascal implements many of the things that we're used to seeing in BASIC, but goes beyond it. You are given more direct control over your numbers and variables, but along with the control comes the responsibility of variable management. We'll get into the ins and outs of programming in Personal Pascal a little bit more in the next article.



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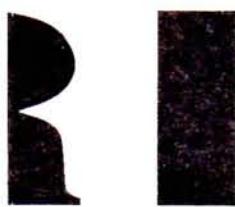
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↔ CONVERSION ↔

by Richard Leinecker
(Author of "*Your ST Comes Alive!*")

Two previous issues (*June and July '87-back issues still available-Ed.*) of the *Atari Journal* contained articles which showed how to read external analog data with an ST computer. Using the circuits illustrated in those articles, many situations which result in a varying voltage can be processed. The 8 bit computers have the analog to digital capability built-in, so they are also able to process the varying voltage levels.

Certain devices, which you may want the computer to control, will require a varying voltage. Both the ST and the 8-bit Atari computers are incapable of this function. Both types of computers can however, write digital data to their parallel ports. By using the proper circuits, this digital data can be converted to an analog signal.

There are many digital-to-analog converters available through parts suppliers. Unfortunately, these require a power supply with both positive 5 volts and negative 5 volts. To avoid this problem, a pseudo digital-to-analog circuit will be illustrated. The circuit will not produce true digital-to-analog, but for most applications will be acceptable.

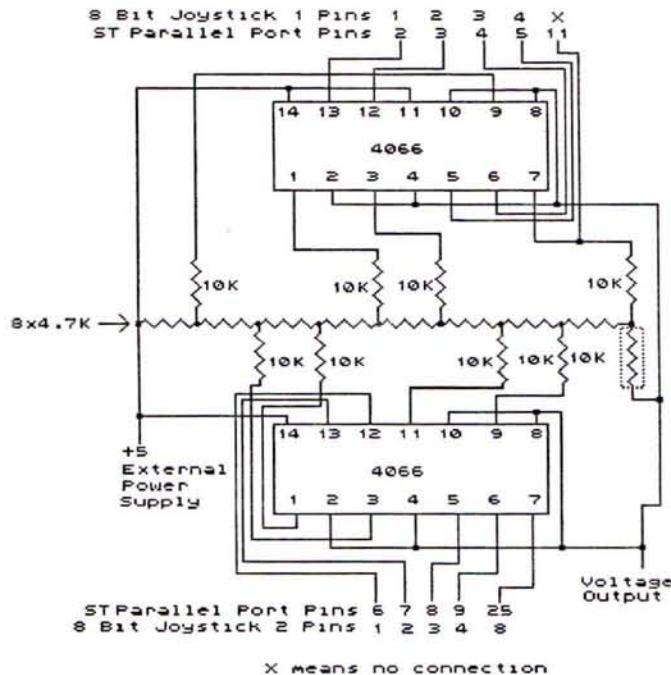


Figure 1

Parts List

2 4066 Quad Bilateral
Switches
8 10K Resistors (1/4 watt)
8 4.7K Resistors (1/4 watt)
Hookup Wire
ST - 25 Pin Connector
8 Bit - Two 9-Pin Connectors

You should construct the circuit on a solderless breadboard first. If and when you decide to solder it into a more permanent version, a perforated breadboard

would be advisable. Make sure that if you solder, you use sockets for the ICs. A word of caution pertaining to the 4066 ICs. They are made using CMOS techniques (complementary metal oxide) and can be easily damaged. Avoid, at all costs, any static electricity that may have accumulated on your body. Also, don't set the IC chip, with the pins down, on a non-conductive surface.

Figure 1 is the schematic for the circuit.

(continued...)

DIGITAL-TO-ANALOG CONVERSION (continued...)

The pseudo digital-to-analog converter will produce voltages from about 2.2 to 5 volts. That may be a problem, because there is a large gap between 0 and 2.2 volts. One application of this circuit is the production of waveforms. This voltage gap will not allow the production of smooth waveforms because every time the computer goes from zero to the first step, there will be a 2.2 volt jump. There are two ways to avoid this problem. The first way is to send only values of 1-255 to the port, and avoid the value of zero. The second way to avoid the problem is to connect an additional resistor to the circuit. That resistor is pictured in the schematic with a box around it.

Writing your software will not be difficult. For both the ST and the 8-bit computers you can send any value from 0-255. To send the value to the ST's parallel port, you can use either of the languages:

In C: Bconout(0,VALUE);

In BASIC: OUT 0,VALUE

Sending the information to the 8-bit ports is a little more complicated because you have to set the joystick ports for output. Try either of the following routines:

In 6502 Assembly:

```
LDA#56 * Configure for
          Output
STA$D302
LDA#255
STA$D300
LDA#60
STA$D302
LDA#VALUE * VALUE to
          port
STA$D300
```

In BASIC:

```
POKE 54018,56
      REM Configure for Output
POKE 54016,255
POKE 54018,60
POKE 54016,VALUE
      REM VALUE to port
```

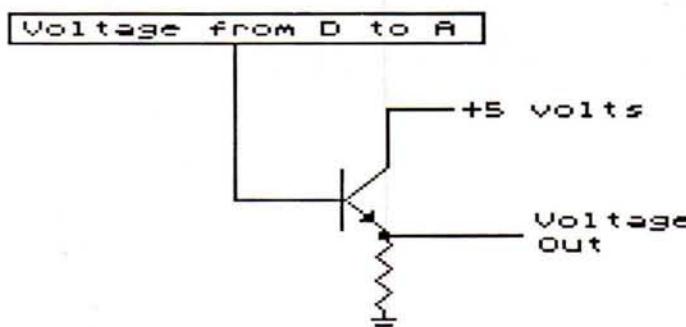


Figure 2

If the output of the circuit is loaded too heavily, the output voltage will be altered. This adverse loading will occur if the device that is being controlled has a low resistance. A transistor is a simple way to provide more current to your device. Figure 2 is the circuit for the transistor driver. You will have to add it to the circuit of figure 1 if you need the extra current. There is one problem with the addition of the transistor driver. The voltage out of the digital-

to-analog converter will be about .7 volts less. Just remember this when you write your software.

If you have any questions regarding this project, please call the Computer Spectrum BBS, (305) 251-1925. Post a message with your question and we will try to provide an answer within a few days.

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Digital Audio Tape

by Brooks Reid

Despite the political blockade, a few Digital Audio Tape (DAT) recorders are making their way into the US market.

The unit I received was a Sony model DTC-1000-ES. It looks similar to a standard cassette or CD player, and fits nicely with other 19-inch-wide standard audio gear, occupying two rack spaces of height. It is front loading and has a large lighted display window, indicating the status of all functions. Controls include fast forward, rewind, play, stop, pause, cue forward and reverse, and an AMS search, all of which operate like typical tape recorder functions. Other features include a timer for programmable recording; selectable sampling rates of 32, 44.1 and 48kHz; input selection(analog or digital); a keypad for track assignment and a headphone output with a level control. You can assign your musical selections ID numbers, and program them to play in any order or skip over unwanted tracks. It comes with a wireless remote which will control all functions. Tapes load into a drawer, which opens and closes smoothly at the touch of a button. The tapes themselves are slightly smaller than a standard cassette, yet bigger than a micro cassette, and are available in lengths of 30-, 60-, 90-, and

120-minute lengths. Outputs include stereo line in and out, digital in and out, and a sync port.

Now for the good stuff. It records with the same quality as a compact disk! That's right, you can challenge the finest studio equipment right at home! Record your own tapes with the audio fidelity of a CD. Of course, this means you have to have something to record which is of superior quality to begin with...like maybe a CD? This leads us to the reason why these units are a little hard to come by in this country.

The record industry's mainstay is the compact disk market and they don't want to give up any of their profits to a tape medium, the way VHS recorders did to Laser disks(remember those?), or the same way people who have cassette recorders borrow their friend's tape or record to make their own copy (the inescapable pirate software wars rage on in every medium). It would be nice to protect the artist, although the only attempts so far involve audio coding, which audiophiles (the most likely candidates for DAT purchases) are sorely against. Enough for politics. For anyone who records live music, DATs are a Godsend. There is also a pro model with balanced inputs and SMPTE, as well as a portable version too.

First the good news: There are a few audio retailers that have stores in Japan, and who are bringing in a few units for sale in the States. Now for the bad news: \$1895 for the home version, higher of course for the pro and portable. Considering the cost is somewhere around \$1400 in Japan, the alternative to a \$2000 plane ticket is not that bad. But...if you can wait, the price should drop considerably, when they figure out a way to curtail CD piracy and start importing in quantity. The company I purchased my DAT through is Audio Gallery, 2718 Wilshire Boulevard, Santa Monica, Calif. You can reach them by phone at 1-(213) 829-3429. Although Japanese units run on 100-110 volts, the difference is not enough to interfere with its operation, according to the good people at Audio Gallery. If you're not feeling lucky, they also sell a transformer available for \$40 that will ease any doubt. I was pleased with the way they handled my transaction and they have assured me that they will exchange or repair any defective units.

I am still a bit sketchy on a few DAT details, since my owner's manual is in Japanese, so make sure that you have them send you the English translation of the owner's manual!



The Adventurer

by Sara H. Groves

Well, it seems someone took exception to "my idea" that ST owners buy high-end software, not games. We have a letter from Hal W. Hardenbergh of DTACK Grounded, Inc. He's the gentleman who wrote DBASIC, a very fast and mostly excellent Basic with a new twist on piracy avoidance, where he gives away the software and sells the manual. Seems he's currently selling about 3 manuals a week which is FAR less than he needs *just to recoup the cost of printing the manual*, much less give him a reasonable return for writing the software, and he is justifiably upset about this. So far, so good.

His next statement is that "The ST is by far the most common machine used with synthesizers, by a factor of 10 to 1 over the IBM PC. But PC synthesizer software outsells ST software by a factor of 10 to 1! That means that at least 99 out of 100 ST-synthesizer software packages in use are pirated!" At this point I question his statistics, not his reasoning. Piracy on the ST is far more common than I'd like but that's a bit much even for me. First, what does the "10 to 1" ratio mean? There are 50,000 ST owners with synthesizers and 5,000 IBM owners with them? Sounds unlikely but I'm open to correction. Another possibility is that ST owners buy more synthesizers than IBM owners. I certainly know many ST people who have more

than one so it may be so. Still, that doesn't make it a 10 to 1 ratio. My suggestion is that it means, say, 30% of ST owners have synthesizers and 3% of IBM owners have them. Oddly, due to hardware sales, this works out to more IBM owners having synthesizers than ST owners. IBM owners pirate all over the place and Mr. Hardenbergh's figures assume they don't. If his figures were correct, it would work out to more like 99.999999% of all synthesizer software in use on the ST was pirated and that's ridiculous. Personally, I have two which were bought at the store like all the rest of my software. [Note to Mr. Hardenbergh: I cannot comment on Michtron as I have not spoken to Gordon about it but, if a company has 100 pieces of software for sale, they may not need to take out large ads for any one program. In addition, MichTron does a lot of direct mail advertising.]

At this point I have to hope, Mr. Hardenbergh, that you read this column more fully than you did the last one. Sir: As far as I know Trip Hawkins has said NOTHING about not supporting the ST as should have been obvious from the fact that the Amiga was included. It is to be assumed that he will be quite confused on receipt of your letter and I resent your sending it to him!

The company in question is INFOCOM which is affiliated with

ACTIVISION and has NOTHING to do with Electronic Arts!! Of course, it may be that you sent your copy to the address included in the article and it is Infocom that is confused by having a new president.

Okay, back down off my high horse and on to some of your questions and a couple of comments I'm a bit surprised no one has made to you in the past. First, it may well be that the .06% figure was correct and that the total ST and Amiga sales combined are, in fact, .11%. However, most people make percentage mistakes in the way I suggested and, using the 50,000 sales figure I used last month, .06% works out to 30 copies. While that is less than plausible for a program that supports the ST, there are still many programs that do not support the ST and I apologize for not rechecking the figures in time for last month's issue.

Following receipt of your letter, I began preliminary investigation into specific figures. First, the SPA has confirmed that the total of 1.1% was correct and that the overall market share for the ST is, in fact, 6 tenths of 1 percent (0.6%) and not 6 hundredths of 1 percent (.06%). You comment that you have assumed ST owners "only buy games." Well, perhaps the authors of various non-game software would disagree with you, WordPerfect seems to. The official

(continued...)

The Adventurer (continued...)

sales figure for GFA Basic is approximately 5,000 sold and the number for FLASH is "over 10,000". In addition, even I have a large number of non-game software packages in my library. My comments, however, were that Infocom's research indicated that ST owners don't buy game software that "doesn't use the capabilities of the machine." This means they buy more graphics games than text games, not that they do not play games.

The specific problems relating to DBASIC are outside the scope of my expertise but not outside that of my husband. He's the Senior Sysop on the Atari16 and AtariDev SIGS on CompuServe. David has both GFA Basic and DBASIC and uses only the former. Perhaps you might do well to look in the data libraries for DBASIC programs that have been uploaded. At the moment, there aren't any, although inquiries have been made. This is particularly unfortunate, since having many programs on various data bases is one of the very best forms of free advertising. I'm told that DBASIC is about half the price of GFA which should, all things being equal, make it more popular, especially with those who are just learning how to program. However, this does not seem to be the case. Perhaps you ought to consider advertising your modem patch as that is the main method people use to transfer programs they have written.

The biggest problem with DBASIC isn't piracy, it's popularity. This stems from a number of causes. To begin with, ST BASIC is terrible and it rubs off on ALL other BASICS. For another, GFA is excellent and it came out first which means competition. Third, BASIC isn't the language of choice for many people using the ST, or any other machine for that matter. However, the largest problem DBASIC seems to have is that it grabs the operating system, and bypasses

GEM entirely. This means programs written in it aren't readily compatible with programs written in anything else, and you can't even check the index on a DBASIC disk from the desktop! All you get is a mess, unless you are currently using DBASIC. That means indexing programs don't work, hard drives may get confused, you can't put DBASIC routines into other programs, etc. Generally, this is too bad because it is fast, easy to use (IF you have the manual), handles various text operations very well, and is probably the language of choice for certain number crunching operations. I understand why you did it that way but perhaps you may want to understand why people are reluctant to use it.

Games!!!

Infocom's got a winner!! At last!! It's called **BEYOND ZORK** by Brian Moriarty and it is FANTASTIC!! The consensus is that it's a text adventure with RPG-ish features. It takes most of these from ROGUE if my information is correct, which it has every reason to be, although I've not played it myself. At the moment, we have a few people who have finished and they are evenly distributed between RPG players and Adventure game players. The onscreen mapping consists of simple line drawings, much as you might make for

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yourself, and there's a box at the top in which you can choose to display the information from your location [the room description] or give priority to your inventory. You can also choose from 4 colors, and cycle through them in various ways, since there are 3 different "groupings" on the screen at once, text, background, and "other", all of which can be changed individually. Personally, I'm using a white background and black everything else but you may prefer to have a cyan mouse arrow and cursor on a black background with orange (rust?) text, or something else.

There are no points, per se, in the game. You start as a Level 0 Peasant, male or female is your choice and makes no real difference, choose your own name, set up your own stats from Endurance, Strength, Dexterity, Intelligence, Compassion, and Luck. Or, you can simply accept the default character, which is

(continued...)

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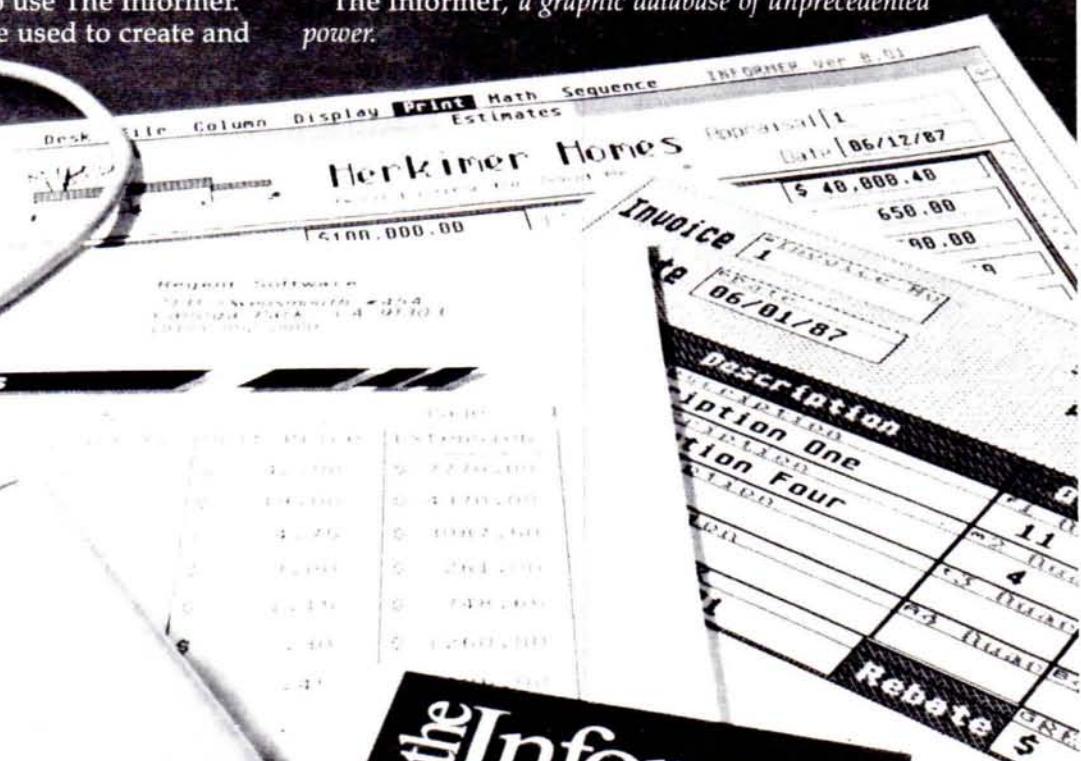
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The Adventurer (continued...)

what I did. Armor starts at 0, and is increased by purchases from one of the three stores in the game. It is suggested that you put your priorities into Endurance first and Strength second, letting the others fall as you wish. You progress up the ladder by solving puzzles and "killing" monsters to gain experience points. Of course, Brian is not big on killing, and most of them are merely humiliated by being bested in a fight, and crawl off to recover in solitude. One does seem to be dead, but he was dead to begin with. Some puzzles, as well as items found in the game, will increase your statistics and this is generally a good idea. For instance, there is much magic in the game, and you need a certain level of intelligence to read the "quick word" that allows you to use a scroll. Most of the magic you will use in the game comes in the form of various "sticks" (wand, stave, rod, etc.), scrolls, and potions which you find during the course of the game. The number, descriptions, and uses are finite but an individual item will change from game to game. For instance, the parchment may be a scroll of mischief in one game and a scroll of fireworks in another but you will always have both. There are other absolutes too. Some areas will always have, for instance, a scroll and a "stick", others will always have a "stick" that has a particular type of magic attached.

The only problem I had with the game is the mapping. Some areas are set and do not change, but others are random and will change until they are explored and saved. This bothered me quite a lot at first, but after a while, I discovered that it is a simple matter to take a quick trip around and make a save before working on the puzzles. Sometimes this may present a problem, but not often, and after you've been playing for a while, most areas are fully stable. There are some unusual, but minor bugs

in the game. There is no set parsing for answering riddles, for instance. In one case, you get a series of error messages that would normally lead you to believe it was a parsing error, but if you have the right answer, you can use any standard Infocom parsing for riddles and it will work. Also, when I first boot the game to start a session and restore, my saved colors give me a white background with black text and a white mouse arrow. This is not a real problem with the arrow but it makes it very difficult to read the GEM box during saves and restores. However, it's easy enough to do a quick cycle through the four main colors to pop up a black mouse arrow which then remains for the entire session.

BEYOND ZORK is truly a fitting sequel to the original Zork Trilogy, with a lot of playing time for the money. You will not run out to buy the game on Saturday morning and wonder what to play on Sunday evening. During play you will very frequently need to refer to a red-covered book, "The Lore and Legends of Quendor" which comes with the docs. There's an amazing amount of information in it which is invaluable. In fact, make sure you are fairly familiar with it before starting to play. If you're not used to RPG games, it may take a while before you try your weapon on certain of the monsters that are properly killed with it, but you'll learn that part soon enough. The logic is excellent, and classic Moriarty. A definite winner!!

Infocom has also released BORDER ZONE, their first game that does not support any Atari hardware. It's a real-time spy story with an intriguing twist in that you play three different characters in the same story.



Question Time.

Knight Orc: *How do I deal with the hermit?*

A. Well, first take a good look around his cave to see where things are, then try various obvious methods and notice what happens. You're looking for a way to distract him.

Beyond Zork: *I'm in the cellar. My light keeps going out and I can't get out!*

A. As is usual in this game, you can do this in various ways. Use your light sparingly and fight the monsters where you have outside light or use something you find to rejuvenate your lamp. To get out, you can set up your exit method before you go in or use something you find there. Don't know how? Take a look at what you have, and try a different perspective on it. You'll find it's nice and clear.

Breakers: *What do I do with that stupid Kobby? I assume what he gives me is useful but what about what he says?*

A. He's hungry. Try giving him something to eat. And, yes, you must get a message from him to take back with you. Don't forget to write it down too, as it will be a long time before you need to use it.



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CD-ROM, OPTICAL MEMORY & "DATA-DAT" REPORT: *FALL '87 COMDEX, LAS VEGAS*

by George Langworthy

OVERVIEW:

The Fall, 1987 Computer Dealers' Exposition, COMDEX, featured many new and improved products in what can now be called the "VERY HIGH DENSITY, VERY LOW COST STORAGE" market. Atari Corp. showed an ST and an IBM PC-type CD-ROM drive with audio to list for \$599. Several vendors showed 5 1/4", 12", and 14" write-once drives and media. The first USA demonstration of "almost-ready-to-produce" erasable optical disk drives took place both on and off the floor.

CD-ROM DISC DRIVES

Atari Corp., Sunnyvale, CA had a production version of their \$599 CD-ROM drive. It was originally demo'd as a prototype at the June 1985 Consumer Electronics Show, Chicago, IL, but withheld from production, due to hardware costs, which Atari considered to be outside the viable market. The ST version plugs into the Atari Direct Memory Access (DMA) port, which is similar, electronically, to the Small Computer Systems Interface (SCSI) used by the Apple Macintosh. The Atari CD-ROM drive has a DMA-out plug, allowing for the daisy chaining of

CD-ROM, hard disk drives and page printer. Delivery for the ST unit is planned for February 1988. Delivery for the IBM version was not announced.

An Atari Corp. spokesperson stated that a Chinon (Japan) CD-ROM mechanism is used, and that there would be more than one supplier. CD stereo output is provided. A remote control audio device about the size of a cigarette lighter is an unusual feature. Estimated dealer discounts are in the 30% range.

The IBM-compatible version will ship with an interface card and the Microsoft CD-ROM extensions. Current versions of MS-DOS can only address 32 megabytes, so provisions must be made to access the 550+ megabyte CD-ROM disc.

When Atari showed the prototype in 1985, they announced a targeted \$500 price. Component costs are now reduced to allow the \$599 list, which makes Atari Corp. the price leader for IBM and non-IBM formats. Using the 520STFM at \$799 list, a complete monochrome, high resolution inquiry station would sell for under \$1400. Color would add \$200.

The vertical application systems market is going well for CD-ROM hardware and content suppliers.

The consumer market, three years after the first Sony and Phillips CD-ROM production models were shown, awaits a package of CD-ROM data bases in a price range of interest. This author believes it will take 10 products, each selling for under \$300 per set, to interest significant numbers of consumers. To date, only two exist: The Grolier Electronic Encyclopedia at \$299, and Microsoft's Bookshelf, at \$295. Bookshelf gives on-line access to 10 reference works of interest to writers and office word processing people.

One type of application that may spur much wider use of CD-ROM systems is special-interest-group data distribution. The organization pays for most or all of the cost, so that the discs themselves are \$100 or less. Examples are: National Meteorological Grid Point Data Set, \$35; DEC Decus VAX SIG Symposia Collection, \$100; and the U.S. Geological Survey demonstration disc, \$35.

Two competing cartridge or caddy enclosures for holding the CD-ROM disc free of fingerprints surfaced. The Sony cartridge is something like the "Jewel box" now used to store Compact Discs

(continued...)

CD-ROM REPORT (continued...)

(CD's). The Sony proposed standard cartridge has a rotating center, and mechanical metal slide. The cartridge containing the disc is placed into the drive and remains as part of the system.

Hitachi, Japan Victor Corporation (JVC), Panasonic, Sanyo, and Toshiba showed their second generation half-height drives with the Sony cartridge. Because it has both metal and plastic parts, and a moving bearing, this must cost several times as much as the LMS Phillips caddy, described below.

Laser Magnetic Storage International Company (LMS), Colorado Springs, CO., uses a simpler CD and CD-ROM disc holder. It is a caddy/cartridge, consisting of two halves and two plastic fingers. The disc is stored inside. The caddy is inserted in the drive slot, and the CD is caught by the drive. The caddy is removed and later inserted to retrieve the CD. It is a much simpler mechanism and system than the Sony. It appears to be much more suitable for audio and data "jukeboxes" which would hold 10-50 CD's, because of its simplicity, low cost, and light weight.

On October 28, LMS announced that they had received a multi-million dollar contract to supply Hewlett-Packard Company, Cupertino, CA with half-height drives and cartridges, using the new LMS caddy. HP will install the LMS drives in their Vectra PC's and IBM PC/ATs, to provide access to HP computer application support information. Text, illustrations, charts and graphics can be accessed in seconds. User manuals, application notes, and product catalogs are some of the publications included, with one CD-ROM per month being issued. HP believes it is the first to market a computer end user information service on CD-ROM.

WRITE ONCE, READ MANY (WORM) OPTICAL DISK DRIVES

Companies showing new or improved 5 1/4" write once optical disk drives included Hitachi (Compton, CA.), Laserdrive Limited (Santa Clara, CA.), Maxtor Corporation (Ricoh OEM) (San Jose, CA), Mitsui Comtek Corporation, (Saratoga, CA.), and Optotech, Inc., (Colorado Springs, CO). SCSI, IBM compatible and proprietary interfaces are used. There is an International Standard Organization (ISO) specification for 5 1/4" drives and media, and some manufacturers stated adherence to that standard for their drives or media.

Media-only representatives included a Hoechst, Celanese and Sumitomo Chemical joint venture, Plasmon Data Systems (San Jose, CA.), a U.K. affiliate and a TDK (Port Washington, NJ) and Pioneer Electronics Corporation 5 1/4" WORM media joint venture. The latter claim the first product to conform to ISO specs.

Laser Magnetic Storage (LMS) showed its new 1200E 12" unit, suitable for "jukebox" applications totalling up to 20 two-gigabyte disks. Both the media and drive mechanism have been improved from the previous model. Toshiba America, Irvine, CA., showed a 2-gigabyte-per-side 12" system, a second generation product. Eastman Kodak Company brought out its giant System 6800, capable of several "boxes" of up to 340 gigabytes each. Needless to say, giant dollars are required as well, for this mid-1988 14" disk-based WORM system.

The WORM market appears to this author to be healthy, with the numbers of suppliers, the prices and the quality of product all showing marked improvement over 1987.

ERASABLE OPTICAL DRIVES AND MEDIA MAKE FIRST GRAND ENTRANCE

Sharp Electronics Company (Mahwah, NJ), showed a rare earth transition metal alloy over strengthened glass substrate 5 1/4" product. The 211-megabyte per side product is expected to be available in production in mid-1988. Sony Corporation, Optical Memory Group, San Jose, CA, announced a 325-megabyte per side 5 1/4" erasable drive. A magneto-optic layer is placed over a polycarbonate substrate. Both the continuous composite format and the servo sampled format are supported. Verbatim, an Eastman Kodak Company, again showed its 3 1/2" erasable drive, expected by June, 1988.

Several major factors affecting erasable optical disk (EOD) systems are not resolved: Which drive technology will give lowest reliable costs; which media technology will give the best combination of low cost, best archival life and greatest number of erasures; and which manufacturer(s) will be able to best present their side of the story to the edp end users. When and if a manufacturer solves enough of these problems to make a consumer erasable optical recorder for audio or video, the marketplace will change. The manufacturer(s) that can write off their very high development costs through sales of hundreds of thousands to millions of consumer EOD products will have an almost insurmountable edge in the data market.

If everyone has access to the successful EOD technology as they did for CD audio, then the "ballfield" will continue to be mostly level, where anyone can play.

(continued...)

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CD-ROM REPORT (continued...)

"DATA-DAT", THE NEW BABY ON THE BLOCK.

Hitachi Sales Corporation of America (Compton, CA.), was the only company to officially show a computer peripheral version of Rotary Digital Audio Tape, "Data-DAT". Look for samples in the second quarter of 1988 and production in the third. No pricing was discussed. The enclosure shown and Data-DAT drive were engineering feasibility models. The matchbook-sized cartridge and high-density helical scan 3.8 mm tape drive easily fit into the 3 1/2" personal computer disk drive form factor. With a tape length of 60 meters, two hours of CD-quality audio or 1.2 gigabytes of formatted data are available.

Hewlett-Packard and Sony announced August 20, 1987, a joint development effort for Data-DAT products. Nothing has been shown to date.

Data-DAT drives are like miniature VCRs, employing the well-known and high production volume helical scan technology. Rotary DAT recorders, the only type of DAT available now, can cost less than VCRs, when the same production volumes of millions per year is reached. Prices could be in the \$500 range by Christmas 1988, for consumer audio DAT recorder/players. Current prices are \$1200 in Japan. (See Brooks Reid's article, this issue, for units presently available in the U.S. - Ed.)

USA introduction awaits either a stalemate, or resolution of a long-standing dispute between musical material copyright owners, and on the other side, equipment and media manufacturers, dealers, and consumers. This dispute centers around who gets what percentage of the revenue from recorded media, blank media, and DAT tape recorders. Copyright holders want a third system of copy protection built into DAT recorders in addition to the two already in

place. This has slowed audio DAT sale, which has, in turn, slowed Data-DAT development and introduction.

On Wednesday, November 4, 1987, Lee H. Elizer, of Peripheral Strategies, Inc., Santa Barbara, CA., hosted an organizational standards meeting at the Las Vegas Hilton Hotel for interested Data-DAT vendors. Over 70 participants representing over 30 US and foreign companies attended.

A followup meeting was planned for early 1988 to be held in San Jose, CA.

This author believes that Data-DAT will give optical erasable systems serious competition in all applications NOT requiring on-line, real-time access to data. This includes backup, archiving, data distribution, and both text and multimedia publishing. Why?

***USA introduction
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Erasable optical technology is untried. When introduced, it will be more expensive than write once optical. Formats and media will be incompatible, unless a strong standards effort appears. The unknown fear factor, which may well have delayed implementation of CD-ROM, will certainly be there. Until consumer audio and video versions of EOD are in full production, media costs will be 10 times (10X) that of Data-DAT.

For example, WORM media:
\$100 list for 400Mb =
\$.25/megabyte.

DAT tape: \$20 list for 1.2 Mb =
\$.017/megabyte.

Early EOD media could well be more expensive than for WORM.

Data-DAT tape drives will benefit from the consumer market production volumes and attendant cost advantages over computer peripheral devices. This means that Data-DAT tape drives could sell for 20%-50% of EOD prices, initially.

Data-DAT will also impact CD-ROM and WORM markets. Current audio DAT specifications include a three-hour audio version that would hold 1.8 gigabytes, more than 3 times that of a standard CD-ROM. Data-DAT has no mastering charge, and can be replicated with two Data-DAT drives. Data-DAT media is erasable, and thus reusable. Data can be modified and added to, as in any magnetic tape drive system.

The higher WORM drive and media costs may mean that Data-DAT becomes the medium of choice for low access archival applications. This is not to discount the advantages of CD-ROM and WORM systems in some applications. It is only to suggest that Data-DAT's enormous capacity and potentially very low drive and media costs may impact all optical storage and retrieval systems.

In a COMDEX panel on personal computer backup systems, Bruce Grant of MicroAge, Inc., Tempe, AZ, gave a short, convincing talk on why Data-DAT would soon dominate the personal computer backup market. The drive cost would drop under \$500, which represents a "zero-cost-item" to the business computer user, and the media cost would be insignificant for daily-monthly automatic backup. Please note that backup is but one major application area for Data-DAT.

Whichever of the 81 signatories to the audio DAT standard is in the computer market, is a potential Data-DAT supplier. This includes all the major Japanese and European manufacturers.

Foreign Correspondent: The Kiwi Connection



By David Hona

Modems

Here in New Zealand, we have the European, or CCITT telephone standards, as opposed to the North American Bell system.

This difference means that modems that conform to the CCITT standards only, will not work with Bell-standard modems. Nowadays however, you can buy, at great expense, modems that support CCITT and Bell.

Because we can't use Bell-standard modems, we must buy the European or locally-made modems. Now, in case you don't know, going "on-line" with a modem in Europe can be very difficult, and especially in West Germany. There, the Postal, Telegraph & Telephone (PTT) authority, *Bundespost*, is very strict about the use of modems. In some European countries it is illegal to own one, but you can lease one from the local PPT!

A Bell-standard modem is not of much use to anyone here without a substantial bank account, as the only use it could be put to is dialing up US or Canadian bulletin-boards! At the moment, the cost to call the US from New Zealand is \$0.90US per minute (which is expensive!) Even if you were rich enough to do this, you would probably find a lot of line-noise with a direct connection, making it very difficult (at times) to get much joy!

If one wants to access a commercial US database service like CompuServe, most CCITT countries have a national Packet Switching service. These are similar to the likes of Tymnet, DataPac and Telenet. I access CIS, through Pacnet via Tymnet. A packet-switching service is, to a modem, what a telephone exchange is to a telephone. At the moment, we do not have a link to the phone network via Pacnet. In the US, Telenet offers access to the phone network and bulletin boards, as well as the large on-line databases, for a flat monthly charge.

Videotex

Videotex, originally called Prestel, was invented by the then British Post Office (now British Telecom., PLC) in the early 1970's.

Videotex features 16-colors, 40-column text and an alphanumeric character set for block character graphics. This allows for the use of TVs as monitors, thus enabling home use. The character set also supported such attributes as blinking, double height, inverse, foreground colored text, multiple-colored text and back-/foregrounds, etc. Videotex was designed to provide an 'interface' between the user and a database system, in much the same manner that GEM is a interface between the user and TOS.

The videotex uses the technology that was available at the time it was invented, with emphasis being that it was to be low-cost, and simple to use.

The speed at which it operates is what is called a 'split baud rate', at 1200 BPS receive and 75 BPS (yes, that's right!) transmit - full duplex. Why the split rate? Because of the cost, and the fact that it was not necessary, due to the manner in which videotex operates. It was intended that the user would only be sending a few key strokes to get what they wanted, as videotex is entirely 'menu-driven'. This meant that the few key strokes would not be required to be transmitted very quickly. With this in mind, the dedicated videotex terminals have simple key-pad type keyboards, like the old Atari 400 (yuk!).

Basically, videotex is more suitable to be used for a database that is read-only, such as an electronic magazine. This is, in fact what was envisaged as its prime use. Originally, only dedicated videotex terminals with built-in modems could use the systems; then a keyboard terminal was produced that could be used with a domestic TV as a monitor.

Modems that support videotex are very common here. All you need, in order to use videotex, is a terminal emulation program. Most popular computers here have

(continued...)

The Foreign Correspondent:... (continued...)

"Originally, only dedicated videotex terminals with built-in modems could use the systems..."

videotex emulators, including 8-bit Ataris and the ST. "Fastcomm" (Atari UK) and "K-Comm" (Kuma Computers UK) are two of the available programs.

There are many videotex databases in New Zealand, mostly business-oriented and two general interest systems, but the industry has not yet 'matured,' with it still undergoing changes, and being tested for such applications as home-banking. All the banks have schemes under evaluation, with one providing a electronic banking service for businesses only.

Nowdays, there are many commercial variations of videotex, with a couple of European countries adopting their incompatible versions of videotex. The latest versions of videotex include 80-column text, and true on-line color graphics.

Many bulletin boards use the videotex baud rates, because of the proliferation of this type of modem here. There are also 'reverse' videotex baud rates of 75/1200 full-duplex. Inexpensive Telecom-approved full-1200 baud modems are, however, still non-existent here. With the deregulation of the telecommunications service in New Zealand we will now be seeing more Hayes-compatible modems, as Taiwan and Hong Kong manufacturers are now producing cheap CCITT versions.

Unfortunately, my favourite telecom program ("Flash!") doesn't support split baud rates, as do Fastcomm and K-Com. Alan Page, co-author of Flash, says it is a hardware limitation of the ST serial port, but it would certainly seem to be possible to buffer the output to the modem, to simulate split baud-rates, if your modem

supports them. This should be possible, as the videotex standard uses 75 baud for transmit only. After all, if these other programs can do it, why not Flash?

How about someone writing a fix or a desk accessory to do this? Only countries that have the CCITT system would benefit from this though. Sigh... Oh well, you can't have it all!

Software Copyright

Now this is a hot topic, especially if you're a programmer trying to make a living out of commercial software. There are some pretty strong views on this topic -- against it, and how it will and IS affecting software development for the ST.

Basically, I believe that there are a lot of double standards out there in the software industry. I hear people saying that the copying of copyrighted software is illegal (which we all know) and is downright dishonest!

Now, how many of those people have photocopied newspapers, magazines, books, cartoons or other similar copyrighted material...and used them WITHOUT permission of the owner?

...But, that's not the same thing... is it?

YES, it definitely IS the same thing! As I see it, those people are stealing too! Do you understand my point?

Also, there is much debate over 'the look and feel' of programs. In case you don't know, this is where a program

that uses a similar method to do things, like VIP Professional is supposed to be very similar to the popular PC spreadsheet program, Lotus 1-2-3.

Apple Computer, Inc., successfully managed to gain damages, and stopped Digital Research, Inc. from producing a version of GEM that they considered as "infringing" on their copyright. According to Apple, DRI's GEM looked too similar to their Macintosh Desktop! The judge agreed, but let DRI produce a modified version of GEM.

This is a very murky area. I'm sure that some software houses could make (and lose) a lot of money from litigation on both sides of the courtroom.

All I can do is to suggest that we try to act like sane people!

To all those copyright violators--if you want to kill the new software market for the ST, carry on with your selfish criminal acts... But, remember there are a LOT of innocent people who are going to suffer...me included!

I am of the opinion that software piracy is no worse for the ST than for any other computer. I am quite certain that piracy makes up a significant proportion of PC software 'sales'. With a market the size of the PC, software houses and small self-employed programmers can still make a decent living. In comparison, however, the ST software market is small-time stuff and doesn't take very many people to destroy it.

Well, I'm sure that'll stir up a few people, and I'd love to hear from you all! □

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DAVID SALISBURY

**palmetto
printing**

art - layout - typesetting - printing - binding

This month, I'm going to try to provide a bit of information for those of you who've been after me about help in using PUBLISHING PARTNER. It seems that you're of the impression that I have some secret tips about using this program. Well, I'm not sure that they're so "secret", but I suppose that I've had enough pages go through my printer by now, so I'll try to share some of those experiences. Note that this is based upon the use of version 1.01/1.02. If you've got a different version, these hints may not always work for you.

BEST-KEPT SECRETS

The first of these is the ALT-E key combination. I don't know how many people have asked me questions about problems that could have been easily solved by this simple procedure. I must admit that I missed this one on the first trip through the manual, and hadn't known how valuable it could be, but once I heard someone mention it, I applied it to many of my own problems.

Quite simply, this is a "request for editorial information". It's used by first selecting the "Object Arrow" (the second item from the top, in the toolbox), and then pointing at, and clicking on, the object that you'd like more information for. This might be a column of text, a single-line text-object, a picture, a box rule, or a hairline. Anything that has been created on the page can be called up with the object arrow, and once selected, information may be gleaned through the use of ALT-E. If you're trying to precisely align two columns of text, for example, you might click on the first, and then, while holding down the "Alternate" key, press the "E" key. This will result in a dialog box popping up, with information as to the X1 and Y1 locations (only, in this case). This information can then be noted, and the second column can then be selected, ALT-E again requested, and the information can be compared. If, for example, the second column was slightly lower (X is greater) than the first

column, you can then use the cursor arrow to locate the fine vertical editing cursor, and either press "Esc", or use the cursor arrow keys and the backspace key to edit the data in that line. Once you've inserted the appropriate information on this line, you may click on "OK", and you'll find that both columns of text are located in alignment! Simple, eh?

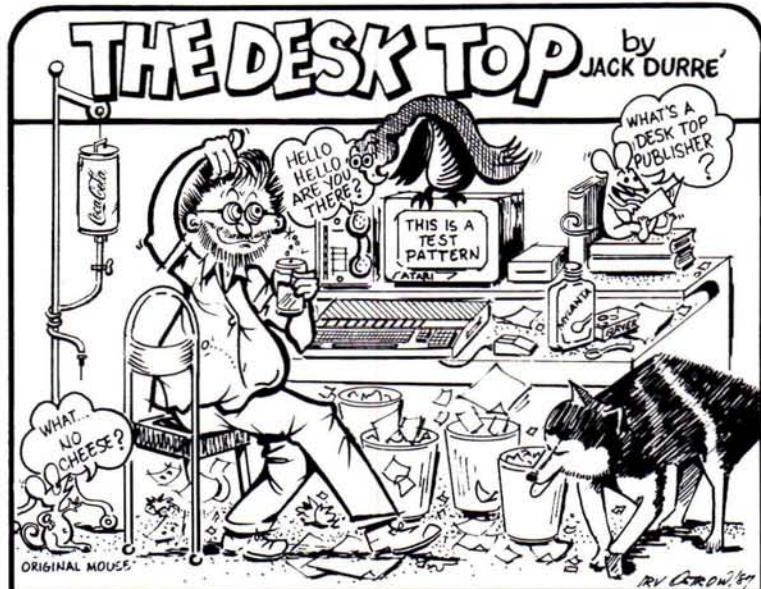
One of the applications for this can be in the extra "bolding" of a single line of text, such as a title. You first create this item through the use of the Control key and clicking the left mouse button at the same time. This places the "null" indicator at the beginning of your text. You may then type in your desired text. (Note: There is a limit to the number of characters and spaces that you can type in as one single line, and carriage returns don't work in this mode.) Now locate the text object as you like, and then press ALT-E, and note the X coordinate. Dragging the cursor over the text, so as to highlight it, you may now "Copy To Buffer". Return to the text mode, again click on the Control and left mouse button for a new "null", and then select "Copy From Buffer". This will allow you to copy the previous line of text into this new location. Using the information that you obtained from

ALT-E, you may now locate the second one directly over the first. For what you ask? Simply that now you may use ALT-E, and move the second object small amounts at a time, until it is slightly out of register from the first. I find that by shifting the second object to the right of the first, I can accomplish an extra bold character, similar to certain commercial typefaces. (The exact amount to shift is determined by the type size, as well as personal taste.) Give it a try!

If you're a math wiz, or have a calculator handy, you can use similar techniques for locating "shadows" behind boxes, or to shift every item in an area by the same amount (at least until Soft Logik gets version 2.0 out!). Many editing techniques become obvious, once you're aware of the ability to edit this sort of thing, and one of my favorites has to do with being able to edit the line-width of a box, or the fill pattern within it, and that leads me to the next item...

STEP TO THE REAR

Or to the front, for that matter! When Publishing Partner creates a page, it treats each new object, be it graphics or text, as a separate "layer". It might be best to think of the blank page as a sheet of paper, upon which we're going to "paste" another piece of paper,



(continued...)

The Desktop (continued...)

holding our text or graphic. The first one created is at the bottom of the "stack", with each successive item being placed on the top. So long as we don't place a new item on top of an old one, we don't have any conflicts. On the other hand, placing one piece, or a part of one piece, on top of a previously-placed one, causes a conflict. In most cases, it covers up the lower one(s)! This can be used to our benefit, IF we intended that to happen, but what if we didn't? In that case, we need to "lift", the underlying one, or "move to front". Simple enough, right? Until we consider that we're working with two different kinds of "paper", metaphorically-speaking. For most of our work, such as columns of text, or graphics, we can consider each piece as being opaque, but for single lines of text, we can also create "transparent" layers. While I don't recommend that you attempt to create complete "sidebars" by this method, you'll see that I use it frequently around here for such items as the headers on the Reviews articles.

The creation of a "transparency" is done, quite simply, by first going to "Text" mode, and then using "Style" to select your font size and attributes. Once you've done this, you can then click the left mouse button. This will present you with a "null". If you then begin to type, you will find your line beginning at that point, in the typestyle that you've chosen! (Note: You CAN still revise your text at a later time, in the same manner as with any other text, by highlighting, etc.) These lines may then be placed anywhere on the page, as you desire. (And for alignment, you could resort to the above method of ALT-E editing!)

Now, for the sake of this discussion, let's assume that you have done the above, and suddenly, when you drop your carefully crafted text into place on top of a box, it disappears! Now what? Never fear, bunky, you've just gotten your priorities mixed, somehow, and your text is



"behind" the box. Before doing anything else, choose "View" from the menu bar, click on "Move to Front", and presto!, there it is! There are, of course, more complications that you can quickly discover, as you work with more objects, but so long as you maintain a picture in your mind, as to what's doing what, you should have no major problems with layers. I sometimes find that it's best to do an ALT-E, make note of the coordinates of an object, and then move it out of the way, temporarily. Once I've done whatever else I needed to do, I can then re-locate it in the original location (again, through use of ALT-E... I TOLD you it was useful!!!), and place it in the appropriate layer.

FONTS, FACES, STYLES, AND STUFF...

One of the more confusing topics seems to be when is a "font" a font, and when is it not? Maybe a bit of information is in order here, so let's give it a shot, and see if we clarify more than we confuse. Let's begin with the different *DESIGN CLASSIFICATIONS* of type, including Sans Serif (Helvetica, for example) and Serif (Times, for another example). Other classifications include Old Style, Transitional, Modern, Cursives, and Decoratives. This is the first level of subdividing type into individual categories. Within each of these classifications, we find *FAMILIES* of type, such as "Helvetica", or "Times", or "Bodoni", etc. These families include the different *STYLES* such as Roman (or Upright), Italic, Oblique (different

from Italic!), Bold, Bold Italic, and Bold Condensed. Within each of these styles, traditionally, we find a *SERIES* of sizes, ranging from 4 to 128 or more points. It is at this level that computers have wreaked total confusion, but we'll get back to that in a moment. Finally, a "Typeface", or *FONT* is considered by a traditional typesetter, to be composed of *ONE COMPLETE ALPHABET*, including upper- and lowercase characters, as well as all punctuation and numerals, *IN ONE SIZE AND STYLE WITHIN A FAMILY!* This is most important to understand! When we computer users speak of "fonts", we sometimes mean one thing, and yet another at a different time. The typographer doesn't understand us in those instances, so we'd best learn to do it properly! "Helvetica" is a "FAMILY". It may be italicized, in which case, we're now discussing a "STYLE". If we select 12 point, we've finally selected A "FONT"! On the other hand, a 10-point Helvetica italic is an entirely NEW font.

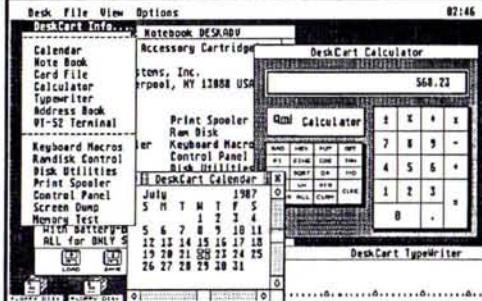
Whew! Confusing, to say the least.

The worst part seems to have its origin with the Macintosh, and its adoption of the term "font" to apply to "families" of type, evidently stemming from the ease with which a user could change sizes, while having loaded only one FAMILY. Although corrupting inroads have already been made, it behooves us to try to break the bad habit, before it goes further, and use the right terminology!

More of this next time, if you like!

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